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RESPONSE TO METRO/TTC "CENTRAL WATERFRONT TRANSPORTATION STUDY"

October 3, 1983

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CITY OF TORONTO
PLANNING AND DEVELOPMENT DEPARTMENT
AND
THE DEPARTMENT OF PUBLIC WORKS

METROPOLITAN TORONTO CENTRAL LIBRARY Municipal Reference

334/03200
Policy
October 3, 1983.

To: City Services Committee

Subject: Response to Metro/TTC "Central Waterfront Transportation Study"

Origin: The Joint Meeting of the Metro Transportation Committee and the Metro Economic Development and Planning Committee of June 14, 1983, and the June 29, 1983, meeting of the City Services Committee (c71csc83050:44)

Comments:

1. Background

The Metro Transportation Committee and the Metro Economic Development and Planning Committee, at a joint meeting on June 14, 1983, had before them a joint report, dated May 30, 1983, from the Metro Commissioner of Planning, the Metro Commissioner of Roads and Traffic, the Metro Executive Director of Economic Development and the Chief General Manager of the Toronto Transit Commission (TTC) submitting a report entitled "Central Waterfront Transportation Study" (May 1983). This report was referred by the joint Committee to the area municipalities for comments by October 24th, 1983. The "Central Waterfront Transportation Study" has its origins in two earlier requests of Metro Council.

Metro Council, when considering the City's Official Plan amendment for the Harbourfront Lands on October 27, 1981, directed Metro staff to undertake a study of the "... total road and transit network for the area". At this time, Metro Council was not satisfied that the proposed transportation improvements associated with the Harbourfront Plan were adequate to service the planned levels of development in the area. The approval of the final 50 000 sq. m (approximately) of office development proposed for Harbourfront remains conditional upon Metro Council being satisfied that the existing transportation facilities and committed improvements are adequate to serve projected travel demand in Harbourfront. Also, on April 26, 1983, Metro Council, when approving further studies relating to the joint Metro/TTC "Accelerated Rapid Transit Study" (ARTS), requested that "... study proposals for waterfront transit" be included in the terms of reference.

The joint Metro/TTC "Central Waterfront Transportation Study" (CWTS) is one of a number of recent studies relating to transportation planning for the City's Central Core and Waterfront areas. As mentioned above, further studies in the ARTS program are currently underway. One of these is the "Downtown Rapid Transit Line Feasibility Study" which includes the analysis of various proposals to improve transit access into the Central Area among which is the study of a "U"-shaped, rapid transit "relief line" which would extend through Union Station and the general Waterfront area, connecting north-eastwards to the Danforth subway line at Donlands Station and north-westwards to the Bloor line at Dundas Street West Station. The final results of this study are expected to be known in about 18 months time. The Province is currently involved in the "GO-ALRT Study Program" which includes a study of the long-term possibility of establishing an electrified, Lakeshore GO commuter rail service operating on an exclusive, grade-separated right-of-way from Hamilton to Oshawa via Union Station and the Waterfront area. This study is expected to take a further 30 months to complete. In addition, a consultant study of the Exhibition Grounds has just been completed which contains recommendations for improved transit facilities to service a possible new, domed Stadium and a Trade Centre in this location. Finally, the Planning and Development Department have just published a "Railway Lands Part II: Development Concept" report which identifies various road and transit improvements considered necessary to accommodate the proposed development levels and projected office employment growth in the Waterfront and Central Core areas, including the Railway Lands.

The objectives of the CWTS were to identify necessary increases in transportation capacity to service the continued growth of the Financial District and to accommodate the future development of the Central Waterfront area, including in particular the Railway and Harbourfront lands, with special attention given to transit improvements to provide access suitable to the emerging proposals for the redevelopment of the Exhibition Grounds. The overlap of the CWTS with the other studies mentioned above, particularly the "Downtown Rapid Transit Line Feasibility Study" and the GO-ALRT study which are yet to be completed, means that the conclusions of the CWTS as they relate to major transit proposals should, at this stage, be regarded as flexible and subject to change. Nonetheless, the CWTS presents a firm set of road and transit improvements for City Council's endorsement.

These road and transit improvements are illustrated and partially costed on Figure 11 and in Table 5, respectively, of the CWTS report. This map and Table are reproduced as Exhibits 1 and 2 of this report below.

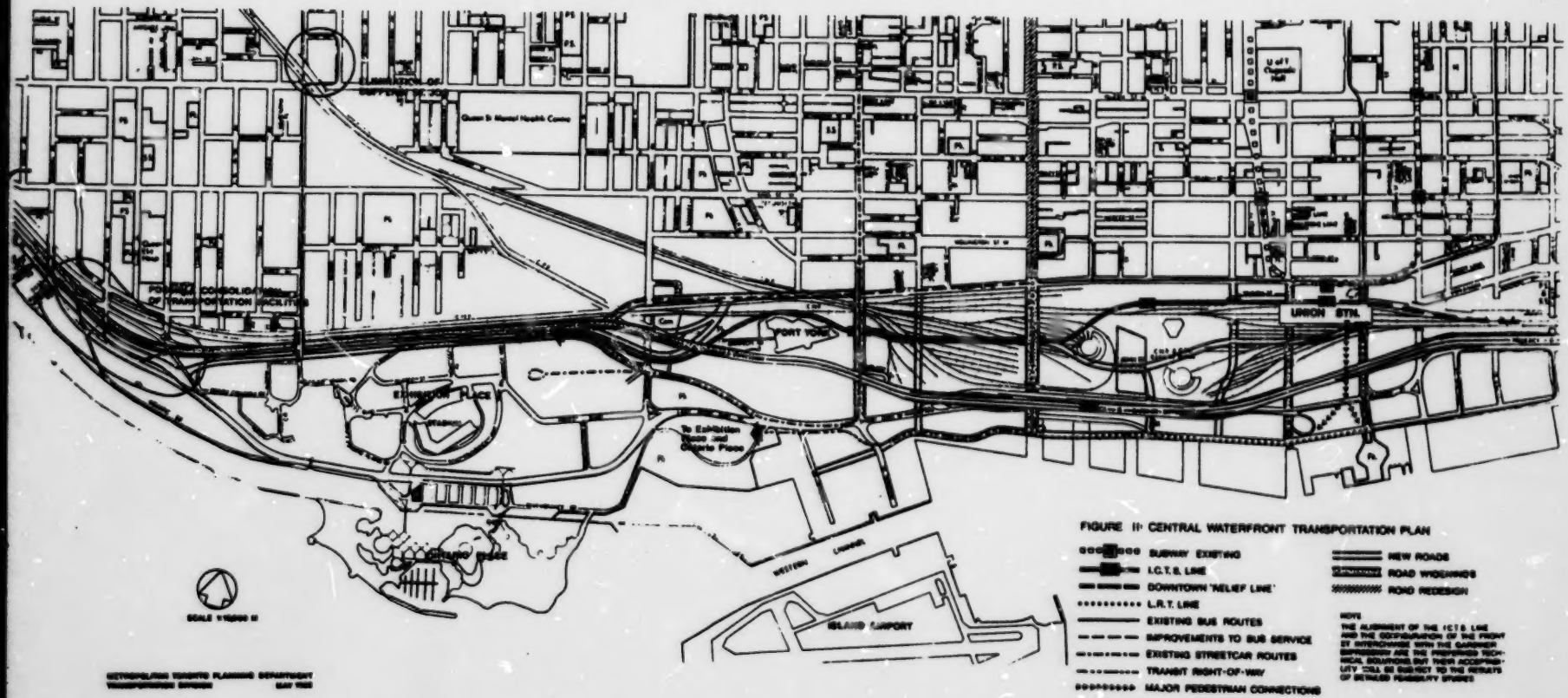
UNION STN.
PORT YORK
Exhibition Place
To Exhibition Place and Ontario Place
ISLAND AIRPORT
SCALE 1"=2000'-0"
FIGURE II: CENTRAL WATERFRONT TRANSPORTATION PLAN
SUBWAY EXISTING
I.C.T.S. LINE
DOWNTOWN 'RELIEF LINE'
L.R.T. LINE
EXISTING BUS ROUTES
IMPROVEMENTS TO BUS SERVICE
EXISTING STREETCAR ROUTES
TRANSIT RIGHT-OF-WAY
MAJOR PEDESTRIAN CONNECTIONS
NEW ROADS
ROAD WIDENINGS
ROAD REDESIGN

EXHIBIT 1

EXHIBIT 2

ROAD AND TRANSIT IMPROVEMENTS
INCLUDED IN THE METRO/TTC "CENTRAL WATERFRONT TRANSPORTATION PLAN"

Road Improvements	Capital Cost (1983 dollars millions)
Lake Shore West Corridor	
• extension of Front Street from Bathurst Street to Strachan Avenue with direct ramps from Strachan Avenue to Manitoba Drive	55 M
• construction of a new Gardiner Expressway interchange with the proposed Front Street Extension to serve trips to and from the west	
• widening of the Gardiner Expressway to 4 lanes in each direction from the proposed Front Street interchange to the Humber River	35 M
Northern Corridor	
• extension of Dufferin Street through Exhibition Place to Lake Shore Boulevard	11 M
• elimination of the jog in Dufferin Street at Queen Street	
• reconstruction and widening of the Spadina Avenue bridge south of Front Street to accommodate 3 lanes in each direction and an L.R.T. facility	5 M(1,2)
• reconstruction of Spadina Avenue from Front Street to Bloor Street to eliminate angle parking and provide r.o.w. for an L.R.T. line	4 M
• widening of York Street to 3 lanes in each direction from Front Street to Queens Quay	Not Available
Internal Road Improvements	
• realignment and extension of Queens Quay westerly to Stadium Road	Presently under construction

• provision of a continuous east-west 'spine' road through the Railway Lands from Bay Street to Bathurst Street	Not Available
• extension of Simcoe Street southerly from Front Street under the rail corridor to Queens Quay	12 M(2,3)
• provision of a new section of John Street from the east-west 'spine' road to Queens Quay	Not Available(2)
• extension of Portland Street southerly from Front Street over the rail corridor to Queens Quay	Not Available(2)

TRANSIT IMPROVEMENTS

Central Bayfront and Harbourfront • construction of a new Harbourfront L.R.T. facility from Union Station south along Bay Street to Queens Quay and then westerly along the realigned Queens Quay to loop at Spadina Avenue	29 M(4)
• protection of an exclusive transit right-of-way from Spadina Avenue within an increased Queens Quay right-of-way to Bathurst Street and within the Harbourfront Lands along the west side of Bathurst Street and south side of Lake Shore Boulevard to Stadium Road	-
Yonge Subway Relief • construction of a rapid transit 'relief' line from the Danforth subway in the vicinity of the Greenwood yards to Union Station	272 M(4) (excluding property)
I.C.T.S. Line • construction of a Waterfront I.C.T.S. line from Union Station through the Railway Lands to Exhibition Place including a temporary maintenance yard	187 M(4) (excluding property)

Exhibition Place	
. provision of an off-street, fare paid bus loop at Dufferin Street and a new bus loop within Exhibition Place	1 M (excluding property)
Railway Lands	
. construction of a Spadina L.R.T. facility from Spadina station on the Bloor subway connecting to the proposed Harbourfront line on Queens Quay	41 M(4)

NOTES: 1. 1981 dollars (Railway Lands Access Study - Phase II).

2. These facilities to be partially financed by private developers.

3. Cost includes only railway underpass.

4. Capital cost includes rolling stock.

The figures presented in Exhibit 2 suggest that the total costs of the proposed transportation improvements in the Central Waterfront will be well over $650 million. Apart from requesting the City of Toronto's overall approval of Figure 11 of the CWTS "... as a framework for future decisions regarding transportation improvements ..." the May 30th, 1983 Summary Report, on the basis of priorities identified in the main CWTS report (p.41), contains specific recommendations for the immediate approval of a number of transportation facilities in the Central Waterfront area. Priority approval is sought for:

- the Front Street extension and a fourth lane on the Gardiner Expressway to and from the west;
- the extension and straightening of Dufferin Street;
- the establishment of a Harbourfront LRT line along Queens Quay from Union Station to Spadina Avenue; and
- the construction of a Waterfront ICTS line from Union Station to Exhibition Place (subject to the findings of the ARTS study).

These priority items, along with all the other proposed transportation facilities and improvements shown on Figure 11 of the CWTS will each be discussed separately below in Section 4 of this report.

2. Overall Study Approach and Conclusions

2.1 Study Approach

The study approach taken by Metro/TTC staff in the CWTS is broadly similar to that adopted by City Planning staff in reviewing the long-term transportation requirements of the Central Core and Waterfront areas as reported in the "Railway Lands Development Concept". Both Metro and City staff focussed their analyses on the growth in peak-hour work trips associated with projected levels of future office development. Using data supplied by City Planning staff, Metro and TTC staff projected the growth in office space south of Queen Street from 1981 on the basis of office development potential in projects under construction or proposed, or on sites where major development could be expected. These include certain projects for which no formal proposals have yet been made or final approvals given, such as the Railway Lands, Harbourfront and Harbour Square.

By this means, the CWTS identified a potential increase of 2.4 m. sq. m of office development south of Queen Street, of which 1.5 m. sq. m is located in the general Waterfront area south of Front

Street. This amount of office space was, in turn, estimated to accommodate an additional 95,000 office workers over the 1981 level.

The Planning and Development Department's analysis used 1982 as a base and included a similar projection of office development on the basis of known development proposals but for the entire Central Core which extends north to Davenport Road and includes the Midtown and Bloor/Yonge office districts. The City's analysis also included two additional and potentially large developments, namely the Eaton Centre and CBC sites. In the CWTS, Metro staff assumed a maximum of 1.03 m. sq. m of office development in the Railway Lands while the City's study took the recently proposed maximum figure of 1.09 m. sq. m. Through this assessment of the development potential of known proposals, the City's analysis identified 3.3 m. sq. m of office growth in the Central Core and Waterfront areas. The individual projects contributing to this figure are listed in Appendix 1 of this report, which can be compared with the listing of office development potential in Table 2 of the CWTS. The difference in total office development potential assumed by the Metro and City studies relate to the differences in base year figures, study area and assumptions about certain sites as described above and not to any fundamental differences in data sources or forecasting.

On the basis of the Planning and Development Department's estimate of a 1976-82 annual, average rate of office floor space absorption (i.e. the amount built and occupied each year) in the Central Core of approximately 150,000 sq. metres, the Metro and City office projections each represent a little over twenty years of office growth at present development rates, though the Metro projection relates to the smaller area south of Queen Street.

The list of projects in Appendix 1 should not be regarded as representing the total office development potential of the Central Core and Waterfront areas. It is estimated that there remains approximately 800,000 sq. m of developable office rights on sites for which there are currently no known development proposals and which, consequently, do not appear on the list in Appendix 1. The list of projects in Appendix 1 merely represents one possible expression of the pattern of office development expected over the next twenty years and was taken as a reasonable a pattern as any for the purposes of analyzing the transportation impacts of future office employment growth. In reality, it is to be expected that some of the projects listed in Appendix 1 will not be built over the next twenty years and, to the extent that this proves to be the case, other developments not currently listed as known proposals will likely be built in their place to maintain the rate of office space absorption that market conditions demand. In any

event, twenty years represents an appropriate period of time for the purposes of estimating transportation demands.

As was noted in the Commissioner of Planning and Development Department's September 7, 1983, report regarding amendments to the Transportation Section of the City's Official Plan, the rate of office development in the Central Area is related to the total level of development permitted by the existing Zoning By-law and Official Plan provisions. As proposed in the "Railway Lands Development Concept", increases in zoned office capacity will be required to achieve a desirable pattern of development in the Railway Lands. In addition, further limited increases in development capacity may be required if certain, key development objectives are to be achieved in the Central Bayfront area. It is not expected that the proposed Railway Lands development will have a significant short-term impact on the rate of office development. Once final approvals are in place, a phasing plan has been agreed to and the redevelopment of the Lands is underway, the existing absorption rate of 150 000 sq. m may increase by the end of the decade to approximately 165 000 sq. m a year. This estimate assumes of course that the level of development proposed in the Development Concept report is approved. However, even with this future increase in the rate of development, the projected levels of development employed in the Metro/TTC and City studies extend to a time horizon (approximately 20 years) beyond which we do not consider it possible to make reasonable projections, at this time, of future land use/transportation relationships in the Central Area.

Both City and Metro staff used similar assumptions in converting projected office development to projected increases in peak-hour work trips. The key variables in this conversion relate to assumptions regarding the amount of floor space per worker, the amount of office space assumed to be on the market but vacant, the degree to which workers may be "absent" on any given day and the percentage of workers that arrive in the peak-hour. Both City and Metro studies lead to the conclusion that a shift in modal split from auto to transit will be required if the roads are to remain operational in the future. The City's analysis of future modal split and the assignment of trip increases to future road and transit facilities is described in Appendix 2 of this report.

Finally, it should be noted that the study approach taken by the CWTS gave special attention to the recreational travel demands expected to be produced by the redevelopment of Exhibition Place. It was assumed that additional recreational trips to this area would have to be handled by transit and the conclusion was drawn that a Waterfront ICTS line would be required to accommodate the additional travel demands created by a domed Stadium and Trade Centre if located in this area. This somewhat separate analysis

of the Exhibition Place development proposal will be discussed below in commenting upon the Waterfront ICTS proposal.

2.2 General Study Conclusions

The CWTS concluded that the projected levels of office development and associated employment growth would require additional road and transit capacity into the Central Area. On the roads, the most acute problem was identified as the peak-hour, westbound movement along the Gardiner/Lakeshore corridor and substantial road improvements will be required to accommodate future, projected levels of peak-hour automobile travel in this corridor. On transit, the major problems were seen to be increasing congestion on the Yonge subway line at and south of Bloor Street and on the Lakeshore West GO-rail service. The City's analysis identifies the same set of long-term road and transit capacity problems. In addition, as already noted above, both Metro's and the City's analyses require a future modal shift towards transit if over-congestion on the roads is to be avoided even with the increases in road capacity outlined in the CWTS and "Railway Lands Development Concept Plan".

Although there is broad agreement between Metro and City staff on the nature and extent of future transportation problems associated with the projected levels of office development in the Central Area, some differences remain regarding the proposals for their solution, particularly as they relate to transit. These differences and qualifications will be discussed in Section 4 in relation to the specific proposals for transportation improvements recommended in the CTWS report.

3. Limitations of the CWTS

3.1 Relationship to GO-ALRT Study Program

The CWTS Summary Report states:

> "While GO transit can be expected to accommodate a modest increase in commuter ridership, the key element in maintaining an adequate level of transit service to the Central Area will be the provision of a rapid transit "relief" line from the Danforth subway to the Union Station area" (p.4).

This conclusion must be regarded as tentative at this stage since the "Downtown Rapid Transit Line Feasibility Study" and GO-ALRT studies are still currently in progress. Given that the proposed "relief line" and any extension of it through the Waterfront area would be located within the same general corridor as the proposed,

electrified GO-ALRT Lakeshore line, there appears to be the need for much greater study co-ordination between Metro/TTC and Provincial staff than evidenced to date. The "relief line" is currently one of a number of options being looked at by Metro/TTC staff and it is not yet clear whether there will either be the long-term need for two major rapid transit lines (TTC and GO-ALRT) passing through the Waterfront area or, if not, which of the two is to be preferred. Although the full GO-ALRT Lakeshore line is regarded as a long-term prospect, the Waterfront section could be built as its first stage.

Similar observations to those made above can be found in the September 8, 1983 report of the Commissioner of Planning for the City of Scarborough where, in commenting on the CWTS, the conclusion is made:

> "It seems clear, therefore, that no endorsement of the Central Waterfront Transportation Plan, as it pertains to the Waterfront ICTS line and the Downtown "Relief" line should be given at this time. In addition, the studies of these two facilities, which are currently underway, should be amalgamated, or at least closely co-ordinated, with the GO-ALRT Lakeshore Study" (p.14-8).

We feel it is appropriate to protect the option for the relief line and its possible routing through the Waterfront area but no approval of specific facilities or alignments should be recommended at this stage.

3.2 Railway Lands Internal Road System and Connections to Regional Roads Network

The CWTS report does not provide a detailed study of the internal road system required to service the proposed Railway Lands development. In general terms, Metro staff have adopted the road concept proposed in the City's "Railway Lands Development Concept" report. There are detailed differences between the internal roads layout shown on Figure 3 of the "Railway Lands Development Concept" report and Figure 11 of the CWTS. For example, the CWTS does not show all the proposed secondary streets and the alignment of the Esplanade West at Bathurst Street is somewhat further to the north in the Metro diagram than in the City's scheme. However, such differences are not of major concern. More important is the extent of agreement between Metro and City staff on the major elements of the Railway Lands road system such as the location of new north-south streets (Simcoe and Portland, and the partial extension of Rees and Peter Streets) and the need to

increase the capacity of existing north-south streets south of Front Street (Bay, York, Spadina and Bathurst).

Apart from the proposed Front Street extension, the CWTS does not consider new connections between the internal Railway Lands road system and the regional road system which services this area. The Planning and Development Department stressed in the "Railway Lands Development Concept" report (p.77-8) that a major transportation planning element in the Railway Lands area is the effective integration of the local roads system into the existing Gardiner/Lakeshore corridor. To this end, the City has proposed a number of changes to the ramp system providing access to and from the Gardiner Expressway and Lakeshore Boulevard. These proposals are shown on Exhibit 3 of this report, which is taken from Figure 8 of the "Railway Lands Development Concept". The ramp reconfigurations shown in Exhibit 3 are critical in achieving the effective use of the capacity provided by the fourth lane on the Gardiner and the increases in capacity provided by the improvements to the north-south streets described above. Consequently, the City's proposals, as shown on Exhibit 3, should be referred to Metro for evaluation and possible inclusion in the program of transportation improvements contained in the CWTS.

3.3 Scope of the CWTS Study

The CWTS is a transportation study written primarily from the Metro/TTC viewpoint. The land use assumptions or office development projections are largely taken as given without any particular regard to the rate or phasing of this development. The transportation proposals which follow from the report are the result of analyzing the traffic impacts which the assumed levels of development produce. However, it is clear that the assumed levels of development and the transportation capacity increases they require, raise larger questions regarding the long-term pattern of development in the Metropolitan area. In response to this concern, the joint Metro Planning/Transportation Committee, when considering the CWTS at its meeting of June 14, 1983, directed the Metropolitan Commissioner of Planning to report on the implications of the report's proposals for increases in transportation capacity serving the Central Area on the implementation of those sections of the Metropolitan Official Plan relating to centres. It is only in this context that a full evaluation of the CWTS transportation proposals can be made.

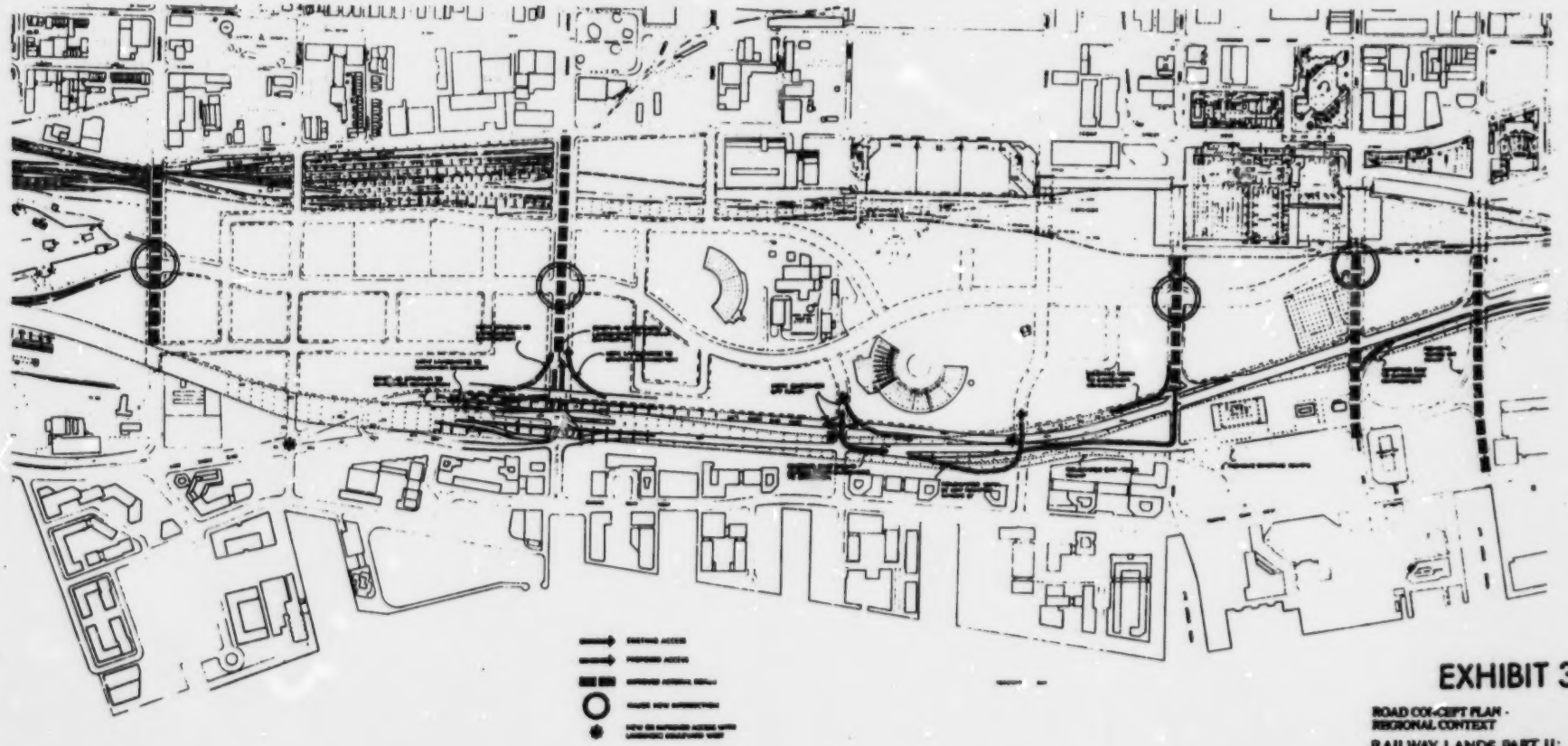

EXHIBIT 3

ROAD CONCEPT PLAN - REGIONAL CONTEXT

RAILWAY LANDS PART II: DEVELOPMENT CONCEPT

4. Comments on Metro's Specific Transportation Proposals and Recommendations

4.1 Roads

4.1.1 Front Street Extension and Widening Gardiner Expressway - these two related proposals are recommended in the CWTS report as the principal means of reducing anticipated congestion problems on the westbound Gardiner/Lakeshore corridor during peak periods. The widening of the Gardiner Expressway would be achieved by adding a fourth lane in each direction between the proposed Front Street interchange and the Humber River. This would provide capacity for an additional 2,000 vehicles per hour on this section of the Expressway.

The Front Street extension would provide an additional access route into the downtown area and reduce overloading on the existing York Street and Spadina Avenue connections to the Gardiner Expressway. The CWTS also suggests that the Front Street extension be designed to provide additional access to Exhibition Place via Strachan Avenue and ramp connections to Manitoba Drive. However, the report also notes that acceptability of the proposed alignment for the Front Street extension "... will be subject to the results of detailed feasibility studies" (p.37).

As indicated in the "Railway Lands Development Concept", City Planning staff endorse, in principle, this proposal to extend Front Street and widen the Gardiner Expressway and recognize that this additional road capacity is a priority requirement to service future Central Area employment growth. However, there are particular concerns over the design of the Front Street extension and City staff are currently evaluating a number of alternative schemes for this facility, including layouts which do not provide a connection to Strachan Avenue and which pass to the north of Fort York. Many factors have to be considered in the design of the Front Street extension, including the visual and other impacts on Fort York, the possible traffic impacts on Strachan Avenue and the effects of this new roadway on industry and other land uses to the north. No final approval regarding the alignment of the Front Street Extension should be made until all the design alternatives have been evaluated and publicly discussed.

4.1.2 Dufferin Street Extension and Jog Elimination - this proposal would connect Dufferin Street to Lakeshore Boulevard and eliminate the discontinuity or jog in this street at Queen Street. These improvements would provide an additional, continuous north-south arterial connection to Lakeshore Boulevard and would relieve pressure on Parkside Drive and Bathurst Street as well as improving access on Dufferin itself. The CWTS recommends that following these improvements, Dufferin Street south of Dundas

Street West should be placed under Metropolitan jurisdiction with an established right-of-way width of 20 metres which is the existing width of this section of Dufferin Street. It is our opinion that improved north-south road connections into the Central Waterfront Area will be required and we have no objections to the course of action suggested by the CWTS for increasing the capacity of Dufferin Street provided the specific design of the proposal is compatible with other planning objectives. These improvements to Dufferin Street will benefit both auto traffic and the operation of the Dufferin Street bus, but will require integration with other general planning improvements in the area. Some work on this has already been undertaken with Metro staff and this study should be reactivated in the present context.

4.1.3 Widen Spadina Bridge and Redesign Spadina Avenue North of Front Street - both Metro and City staff agree on the desirability of introducing an LRT service on Spadina Avenue from the Bloor subway line down to Harbourfront. The provision of such a transit service would require the rebuilding of the Spadina Avenue bridge across the Railway Lands in order to support the weight of streetcar vehicles and accommodate six lanes of traffic plus two streetcar tracks. A redesign of the Spadina pavement north of Front Street would also be required to accommodate a Spadina LRT and four lanes of traffic and angle parking would need to be eliminated.

In addition, we would suggest the introduction of direct ramp connections to and from Lakeshore Boulevard westbound at the south end of Spadina Avenue as illustrated in Exhibit 3 of this report. These changes would, in turn, allow a direct connection to be made from Lakeshore westbound to Gardiner westbound in the vicinity of Spadina Avenue. This Lakeshore/Gardiner connection would be particularly beneficial to p.m. peak-hour, westbound traffic and, along with the proposed Front Street extension, would further reduce queues on the Spadina Avenue and York Street on-ramps to the Gardiner at these times.

4.1.4 Widening of Bay, York and Bathurst Streets South of Front Street - the widening of Bay Street south of Front Street is considered necessary to accommodate streetcar operation on this section of street as part of the proposed transit service for Harbourfront. This service would operate along Queens Quay from, at least initially, Spadina Avenue to Union Station via the south section of Bay Street. Current discussions between City and Metropolitan staff regarding the proposed Water Park Place project at Bay Street and Queens Quay are taking into account the need for widening the south end of Bay Street.

Projected traffic volumes on York Street south of Front indicate that a widening of this section of road (from a 20 m to 30 m

right-of-way) would be desirable if possible but the rail underpass north of Lakeshore Boulevard makes a widening at the Front Street end much more difficult. As yet no firm proposals for widening York Street north of Lakeshore Boulevard have been developed.

As noted in the "Railway Lands Development Concept", the Planning and Development Department regard Bathurst Street south of Front to be of adequate width although the bridge across the Railway Lands may need to be replaced and the elevations changed to connect to the proposed Esplanade West roadway. Perhaps more important than widening Bathurst Street is the CWTS suggestion to improve the intersection of Lakeshore Boulevard and Bathurst Street. This intersection provides a major bottleneck to peak-hour traffic on Lakeshore Boulevard and improvements here would provide added through capacity for Lakeshore traffic to and from the west. In addition, the extension of Queens Quay to lower Bathurst Street will place added pressures on the Lakeshore/Bathurst intersection. At present no specific designs for intersection improvements at this location have been proposed.

4.1.5 Upgrading Bathurst and Jarvis Streets - the CWTS briefly suggests that Bathurst and Jarvis Streets "... should be upgraded as much as possible by undertaking intersection improvements and minor widenings at key locations". Changes to Jarvis Street would be acceptable provided they are along the lines recommended in the past by the joint Metro/City "Central Area Traffic Management Study". There are no details of what such an upgrading of Bathurst Street might entail, other than the mention of the Lakeshore Boulevard/Bathurst intersection referred to above, and the approval of this general measure would be conditional upon the acceptability of particular design proposals.

4.1.6 Widening of Bayview Avenue Extension - both City and Metro recognize the long-run need to relieve peak-hour congestion in the Don Valley corridor, and the CWTS suggests that the widening of Bayview Avenue south of River Street with improved connections to Eastern Avenue and Front Street would help accomplish this objective. Although we have no objection to this proposed pavement widening, it should be pointed out that City staff are opposing Metro's position that the right-of-way of this section of Bayview Avenue has to be widened to accommodate the extra traffic lanes. As a consequence, the City is currently seeking an amendment to the Metropolitan Toronto Official Plan to designate the right-of-way width of Bayview Avenue south of River Street as that which exists today.

4.1.7 Simcoe Street Extension - the CWTS notes specifically the importance of the Simcoe Street extension across the east end of the Railway Lands in providing additional access from the

Gardiner/Lakeshore Corridor to the downtown area and the Railway Lands. Through this extension, Simcoe Street will relieve the anticipated congestion on York and Bay Streets to the east and will complement the northerly extension of Rees Street to the west. The "Railway Lands Development Concept" attaches a similar level of importance to the proposed extension of Simcoe Street and takes the analysis one step further by recommending changes to the ramp system which would ensure the effective integration of the south end of this street with the Gardiner/Lakeshore Corridor and the Harbourfront development.

Harbourfront Corporation is proceeding with initial development in the York Quay area of its lands and would give priority to the establishment of the Simcoe Street alignment in order to establish development parcels in this area. The implementation of the Simcoe Street link to Lakeshore Boulevard would facilitate access within the York Quay/Lakeshore/Queens Quay area. Similarly, the extension of Rees Street south from Lakeshore Boulevard to Queens Quay should be given priority consideration.

4.1.8 Widening of the Don Valley Parkway - the CWTS identifies the long-term need to widen the Don Valley Parkway south of Eglinton Avenue to accommodate the forecasted increase in automobile commuting into the Central Area. Metro has already commissioned a consultant study of the Don Valley corridor in general but the results of this study have yet to be released. The CWTS suggests that as alternatives to directly increasing the capacity of the Parkway, the Leslie Street extension could be built as a relief facility or the Gardiner Expressway could be extended eastwards to divert traffic from the Parkway route. In the "Railway Lands Development Concept", the Planning and Development Department recognized the same long-term need for additional road capacity from the north-east and suggested the widening of the Parkway and/or the construction of the Leslie Street extension coupled with the widening of Bayview Avenue south of River Street as possible means of achieving this objective. It is not our position to recommend the extension of the Gardiner Expressway (i.e. the construction of the Scarborough Expressway) as a means of relieving future congestion on the Parkway. Figure 6 of the CWTS clearly indicates that no serious capacity problems are anticipated to arise on the roads in the Lakeshore corridor east of the Don Valley where even under Metro's highest development scenario the overall volume to capacity ratio is predicted to be at an acceptable 0.68 level.

4.1.9 Other Expressway Proposals - the CWTS remarks that in the long-term "... it would be desirable ..." to provide additional road capacity to the Central Area from the north-west by either extending southwards the W. R. Allen Road (Spadina Expressway) or Black Creek Drive (Highway 400 Extension). This reference to

long-term extensions to the Metropolitan expressway system is not reflected in the final recommendations of the CWTS. In our opinion, such expressway proposals are not desirable directions for future Metropolitan and City transportation planning. Our transportation analysis shows that, with the assumed future shift to transit, employment growth in the Central Area over the next twenty years can be accommodated by the transportation improvements recommended in this report which do not include extending any new expressways into the Downtown.

The CWTS report notes that the option of widening and relocating, possibly below ground, of the Gardiner Expressway between the proposed Front Street interchange and Jarvis Street should also be considered at this time in the planning of the Central Waterfront area. The obvious barrier effects of the Gardiner would be minimized by placing it underground through this section and Lakeshore Boulevard eastbound and westbound could be combined into a single arterial street and better integrated into the regular pattern of streets and development. These would be the principal benefits against which the costs of such an undertaking would need to be measured. The present plans for Harbourfront and the Railway Lands dictate that the Gardiner Expressway would have to be placed underground in the location of its present route. Although this would be costly, the present proposals for burying the "Central Artery" in Boston show that it is feasible to replace an elevated expressway structure by one located underground immediately below it without major traffic disruption. We regard the possibility of depressing the Gardiner Expressway in this manner as a long-term option and, in the meantime, the changes to the ramp system suggested in the "Railway Lands Development Concept" should be viewed as the first stage in reducing the barrier effects of the present Gardiner/Lakeshore road system. However, it is considered worthwhile, at this time, to commission a preliminary engineering study to assess the feasibility of depressing the Gardiner in its present location and to provide rough estimates of the costs of various design alternatives which might be considered.

4.2 Transit

4.2.1 The Spadina LRT - both Metro and City staff advocate the introduction of an LRT service on Spadina Avenue to serve the west end of the Railway Lands development and provide access to Harbourfront from the Bloor and Spadina subway lines to the north. The Spadina LRT service would connect to the planned east-west transit services through the Central Waterfront area along Queens Quay and the Esplanade West. The Spadina LRT would provide relief to the Yonge and University subway lines south of Bloor Street and would require, as discussed above, the redesign of the Spadina

Avenue pavement north of Front Street and the reconstruction of the bridge across the rail corridor.

4.2.2 Yonge Subway "Relief" Proposals - both Metro and City staff recognize the need to provide additional transit capacity into the Central Area to relieve congestion on the Yonge subway line. However, there is considerable debate over the exact form in which this additional capacity should be provided. The TTC has repeatedly made it clear that it favours the construction of a new rapid transit line along the existing rail corridor, extending north-eastwards from Union Station to the Donlands/Danforth area, as a means of diverting riders from the Danforth subway line and thus reducing transfer movements at the Bloor/Yonge interchange and reducing congestion on the critical link of the Yonge line immediately south of Bloor Street. This proposal is generally referred to as the "relief line" option. However, under the terms of reference of the recently approved "Downtown Rapid Transit Line Feasibility Study", which was recommended on the basis of the ARTS studies, Metro and the TTC are now looking at a number of alternative "relief" options such as improved downtown transit services on Bay, Sherbourne and Parliament Streets and the possibility of operating at 90 second headways (as opposed to current 120 seconds) on the Yonge-University subway lines. Also, as indicated above, the GO-ALRT program is studying the upgrading of commuter rail services in the Lakeshore corridor which includes the same section of rail corridor as proposed for the "relief line" route. Until the "Downtown Rapid Transit Line Feasibility Study" has completed the analysis of the "relief" options and these findings have been merged with the conclusions of the GO-ALRT program, it is not possible to develop a firm recommendation on the relief line proposal. At this stage, it is appropriate only to protect the option for the "relief line". The analysis of our staff indicates that there are a range of options for increasing transit capacity south of Bloor Street and a number of these possible alternatives are briefly described in the diagrams included in Appendix 2 of this report.

4.2.3 Waterfront ICTS Line - the CWTS recommends that a Waterfront ICTS line be established through the Waterfront area as an extension to the proposed relief line. Metro and TTC staff recognize that such a Waterfront ICTS line on its own could not likely be justified unless directly related to the development of the "U"-shaped, downtown "relief line" which is now under study. Also, if the Waterfront ICTS line is not connected to the proposed "relief line" then a permanent storage yard for the ICTS vehicle fleet would have to be found in the Waterfront area. Figure 11 of the CWTS indicates a suggested alignment for such an ICTS facility though it is recognized in the text that the acceptability of the proposed routing "... will be subject to the results of detailed feasibility studies" (p.37).

Accepting the dependency of the Waterfront ICTS line on the approval of the "relief line" option, there remains the question of whether the construction of this facility on its own could be justified as a special measure to accommodate the demands for recreational travel that might be expected to result from the redevelopment of Exhibition Place, particularly if a domed Stadium and Trade Centre are established at this location. An analysis of such travel demands is presented in Table 4 of the CWTS where it is estimated that future peak-hour departure rates from Exhibition Place could range as high as 55,000 - 65,000 person trips per hour requiring the capacity for an additional 13,500 -19,500 transit trips per hour. At these volumes of projected increases in transit ridership, the CWTS concludes that "... a Waterfront ICTS facility will be required to provide a high capacity direct access from Union Station to the proposed International Trade Centre complex and Ontario Place" (p.36).

However, it should be noted that the future modal split implied by Table 4 of the CWTS is as follows:

Mode	Person Trips/Hr.	%
Auto (2.5 person/car ave.)	12,500	19.0
TTC	37,500	58.0
GO	10,000	15.0
Other (Walk, cycle, taxi)	5,000	8.0
Total	65,000	100.0

This means that in the future 73% of peak-hour recreational trips from Exhibition Place are expected to be made by transit. This is close to the present Central Area weekday modal split for peak-hour, commuter travel and seems an unrealistically high projection for the proportion of future recreational travel by transit. This point can be emphasized by noting that presently observed transit use for a typical Argo football game varies between 25% - 30% of total, peak-hour trips, and for a typical crowded day at the CNE the comparable figure is 30% - 35% of all trips by transit.

Even with improved transit services, a future modal split of 60% of peak-hour, recreational trips to Exhibition Place by transit appears optimistic. At this level, the CWTS estimate of the need for additional transit capacity would be reduced to around 8,500 trips per hour. This figure is below the peak-hour, design capacity of an ICTS facility and could be accommodated by more modest transit improvements to Exhibition Place such as an Esplanade West LRT line, the Harbourfront streetcar/LRT line and

improvements to the existing Dufferin bus and Bathurst and King streetcar services. The 60% modal split assumption would imply a peak-hour demand of 21,000 auto person trips (c. 8,500 vehicle trips) which could be accommodated on the proposed road system.

Notwithstanding the considerations just outlined, it should be noted that high quality transit, such as an ICTS line, servicing Exhibition Place would support the achievement of a 60% transit modal split and improve the overall level of transit service for existing and future additional riders. Such a line would also reduce the pressure for automobile parking in areas around Exhibition Place. In this context, the provision of an ICTS, or equivalent rapid transit service, from Union Station to Exhibition Place could be regarded as a desirable extension of the proposed "relief line", if this facility is approved, but would be difficult to justify on purely transportation grounds as a separate facility to serve the relatively few periods of peak, recreational demands at Exhibition Place.

At the time the "Railway Lands Development Concept" was prepared it was believed that extensions to the proposed "relief line" and the establishment of GO-ALRT services through the Waterfront area would be accommodated within the existing rail corridor and that TTC and GO vehicles might share the same tracks within this alignment at the elevation of the existing tracks. However, recent discussions with Metro, TTC and Provincial planning staff indicate that until the "Downtown Rapid Transit Feasibility Study" and GO-ALRT study are further advanced it is not possible to say, with any degree of assurance at this time, whether either of the possible TTC or GO lines through the Waterfront area can be accommodated within the existing rail corridor or whether the concept of the shared use of tracks is a practical proposition.

In this situation, we believe it advisable to protect the option of a TTC rapid transit line through the Central Waterfront area outside the existing rail corridor as a possible extension of the proposed relief line or the cross-town connection of the full "U"-shaped relief option being studied by Metro/TTC staff. This position presumes that the proposed GO rail lines can be accommodated in the existing rail corridor where present GO-rail Lakeshore services are located. If this is not the case then the possibility exists that a further right-of-way for a GO-ALRT line outside the rail corridor would need to be protected in order to maintain transit options through the Central Waterfront area. Protecting a right-of-way for TTC rapid transit through the Railway Lands provides a number of challenges but to protect a further right-of-way through this site outside of the existing rail corridor for future, possible GO-ALRT services would require major changes to the proposed Development Concept for those lands.

Recent study by staff to identify a possible right-of-way for TTC rapid transit through the Railway Lands has noted a number of design alternatives which represent variations on the alignment for the proposed Waterfront ICTS line suggested on Figure 11 of the CWTS. These alternative alignments, one partially inside and one entirely outside the rail corridor, are shown on Figure 1 of this report.

The alignment which most resembles that of Figure 11 of the CWTS is Alternative 1 which indicates an elevated transit line preceding westwards from Union Station along the north edge of the railway tracks and then crossing over the tracks to follow the alignment of Esplanade West west of Spadina Avenue. The difference between this alignment and the CWTS proposal is that it crosses the rail corridor further east near the CN Tower, then runs parallel to the southern edge of the rail corridor descending back down to track level to pass under the extension of Peter Street. West beyond Peter Street, the rapid transit line would proceed at the existing grade (76.8 m elevation) underneath the road at the southern edge of the rail corridor which is to be built up above existing grade over this section. Similarly, at Spadina Avenue, the proposed transit line would swing south at grade underneath the Spadina Avenue roadway which will be rebuilt over the rail corridor and the existing grade of the lands to the south. At Spadina Avenue and Esplanade West, the alignment would proceed westwards at existing grade but under the Esplanade West which is to be regraded west of Spadina Avenue to an elevation of 81.4 metres. West of Bathurst Street, the alignment could proceed north of Fort York, as illustrated in Figure 11 of the CWTS, or it could, as an alternative, follow an alignment south of Fort York (as shown on Figure 1 of this report) and into the Exhibition Grounds.

Alternative 1 essentially places the transit line underground once it has crossed over to the south side of the rail corridor and descended to track level under Peter Street. However, this subteranean route is not achieved by tunneling but rather by boxing the transit line under roads which have to built up above the existing grade level. Consequently, this route could be constructed at grade at an early stage in the development of the Railway Lands and the roads would subsequently be built up over it.

While the alignment shown in Alternative 1 seeks to incorporate the CWTS proposal, there are some difficulties with it to the east of Peter Street in that it is elevated and that it runs within the rail corridor. It is still not certain whether even this length of the ICTS line can be accommodated within the rail corridor, given the requirements of VIA rail. Further, the elevated section running south of the Convention Centre introduces

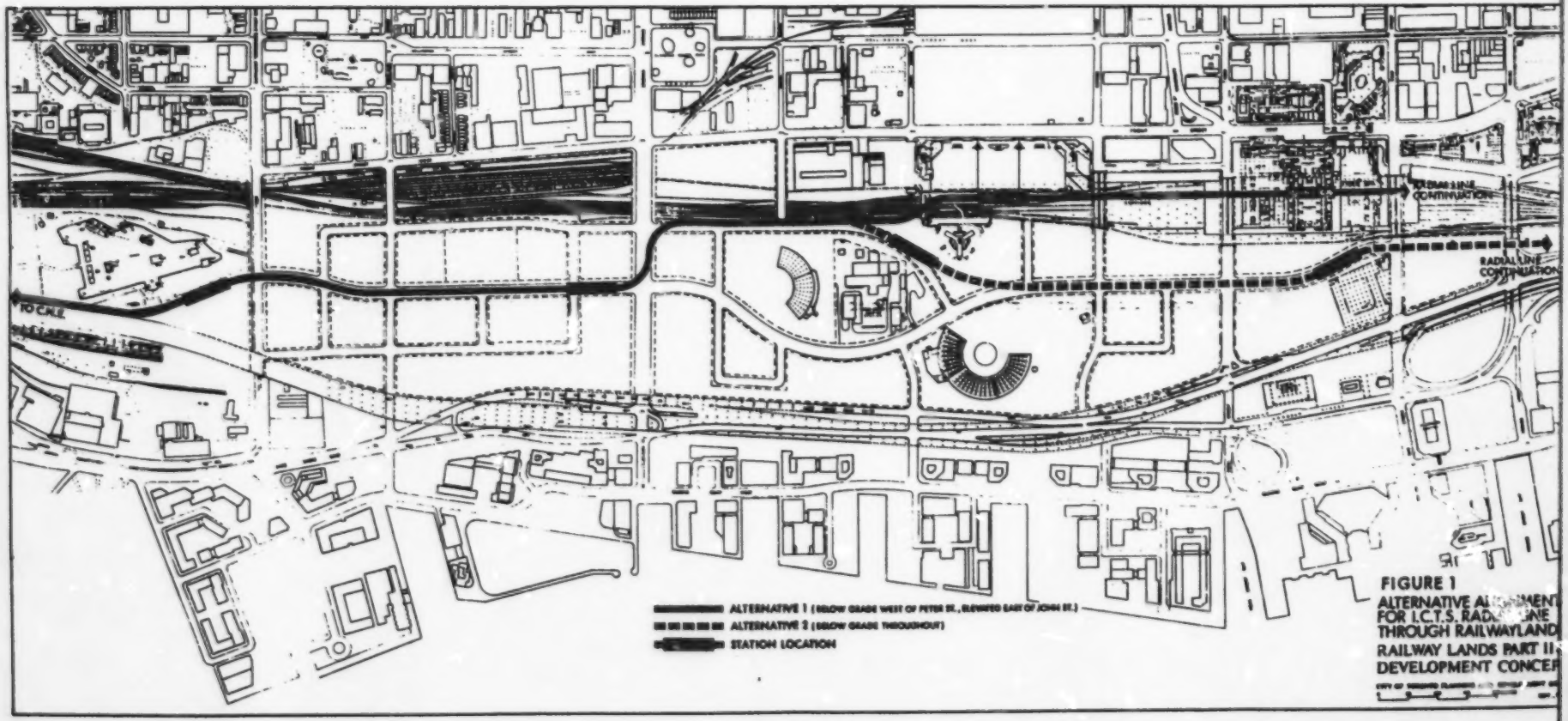
TO C.N.E.
ALTERNATIVE 1 (BELOW GRADE WEST OF PETER ST., ELEVATED EAST OF JOHN ST.)
ALTERNATIVE 2 (BELOW GRADE THROUGHOUT)
STATION LOCATION

FIGURE 1
ALTERNATIVE AL[illegible]MENT
FOR L.C.T.S. RAD[illegible]INE
THROUGH RAILWAYLAND
RAILWAY LANDS PART II
DEVELOPMENT CONCEP

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another barrier between Front Street and the Waterfront and may not be feasible given the present design of the Convention Centre.

In the light of these concerns, a second alignment, Alternative 2, of this rapid transit line east of Peter Street is shown on Figure 1. This easterly alignment envisages continuing the line at the 79.2 m elevation east of Peter Street and curving south, in a tunnel, around the south side of the CN Tower and then descending to an elevation of 71.8 m to run eastwards below the Esplanade West and along the south end of Union Station. This alternative would require tunnelling and some relocation of the underground services for the CN Tower would be necessary. Beyond Union Station the line would ascend to join the existing rail corridor somewhere in the vicinity west of Jarvis Street. In effect, Alternative 2 provides an alignment which would be underground throughout the Railway Lands, the west section of the route being boxed and the east section tunnelled under the proposed road system.

It should be noted that there are further alignment options. One of these is to run the line under the Esplanade West for its full length. Another is to continue the line west of Spadina Avenue under the northern east-west street. These alignments and those shown on Figure 1 should be studied by Metro/TTC staff as part of the present "Downtown Rapid Transit Line Feasibility Study".

The alternative route alignments shown on Figure 1 would accommodate the TTC requirements for an ICTS or equivalent facility but could not meet the curve and grade requirements of the GO-ALRT system. Furthermore, no detailed engineering studies have been conducted to confirm their feasibility or estimate their costs, but it is felt that, if these route options are protected, the TTC's concerns over the possible requirement to locate a rapid transit right-of-way outside the main rail corridor through the Railway Lands site would be alleviated. Although the second alternative described above, which requires tunnelling east of Peter Street and under the Esplanade West to Union Station, may appear expensive, it should be remembered that the original ARTS proposal had the westerly extension of the proposed relief line running underground below the main rail corridor from the CN Tower. Also, in Alternative 1, the section of route along the north side of the existing rail corridor may not prove feasible, making the subway alternative under the east end of the Esplanade West the only practical option.

4.2.4 The Harbourfront LRT - the CWTS recommends that a Harbourfront LRT line be established along a route running south from Union Station along Bay Street then westwards along Queens Quay through the Harbourfront lands to Spadina Avenue. The option for extending this route further west along the extension of

Queens Quay to Bathurst Street should also be protected. From Bathurst Street the route could be further extended to Exhibition Place to provide a continuous rail transit link from Union Station to Exhibition Place via Harbourfront. The streetcars would operate along the median of Queens Quay in a reserved right-of-way. This, in turn, would require the widening of the right-of-way of sections of Queens Quay from the originally planned and approved width of 20 m to a revised, recommended width of 27 metres.

In commenting upon the CWTS proposal, it should first be noted that weekday, peak-period travel demands projected on the basis of permitted development levels in Harbourfront do not require an LRT service within an exclusive right-of-way. Regular streetcar service operating in mixed traffic would provide adequate transit access at these times, particularly if modest transit priority measures were adopted. With the development of Harbourfront now well underway, the upgrading of transit services on Queens Quay to streetcar level should be a priority consideration.

The principal justification, in transportation planning terms, for an LRT service on Queens Quay rather than a streetcar service in mixed traffic is the need to accommodate the peak demands for recreational travel during summer weekends created by the attractions of Harbourfront and the large numbers of people travelling to the Island Ferry Docks. This role would become even more important if the service is extended westwards as a first step in increasing transit services to Exhibition Place.

However, west of the Rees Street Slip, it is difficult, if not impossible, at this stage in the planning of Harbourfront to increase the planned and approved 20 m right-of-way for Queens Quay to the 27 m required for an exclusive LRT service. Such a widening would have a number of negative results. In particular, along the section of Queens Quay west of Spadina Avenue, where a site plan has been approved and development agreements are now the subject of negotiations which have reached an advanced stage, construction projects which are integral to the planned development of Harbourfront could be jeopardized, valuable parkland would be lost, the water's edge promenade narrowed and the design relationship between buildings on the north side of the street and the park on the south side would be adversely affected. Between Spadina Avenue and the Rees Street Slip these impacts would generally be less severe though the widening of Queens Quay would still pose serious urban design problems and detract from the pedestrian environment of the street. Furthermore, a regular streetcar service for recreational trips would blend in better with the intimate pedestrian atmosphere which Queens Quay is expected to create.

This question of a Harbourfront LRT service on a reserved right-of-way continues to be the subject of negotiations between the City, Metro, TTC and Harbourfront staffs. Should Metro/TTC staff continue to press for an LRT service within a fully exclusive right-of-way, then it is our opinion that the preferred alignment is westwards along Queens Quay to approximately Rees Street then northwards into the east-west transit corridor that has been reserved along the northern edge of Harbourfront. This northerly alignment would provide for an at-grade crossing of Spadina Avenue and continue over to Portland Street. Beyond Portland Street the LRT route could either swing back south to Queens Quay or continue in the northerly location along the south side of Lakeshore Boulevard to Bathurst Street.

The alignment of this transit corridor for the Harbourfront LRT is shown in Figure 2 of this report. Staff of the Harbourfront Corporation have indicated that this proposed LRT alignment is acceptable to them with certain reservations. These reservations relate to concerns that the operational and design characteristics of an LRT service on this route would need to be carefully adapted to the unique character of Harbourfront, with particular attention being given to street design, vehicle speeds and pedestrian safety. The LRT should not create a physical barrier to pedestrians crossing Queens Quay, or a visual barrier to looking across Harbourfront towards the water. It is expected that from options presented in Figure 2 Metro/TTC will be able to identify an acceptable transit route that will allow Metro Council to withdraw its objection to the development of the remaining 50 000 sq. m of office space originally proposed for Harbourfront.

4.2.5 Other Transit Improvements - with the proposed changes to Dufferin Street, involving the elimination of the jog at Queen Street and its extension by means of a widened bridge over the Gardiner Expressway into the Exhibition Grounds and south to Lakeshore Boulevard, the CWTS suggests that improvements to the surface transit routes serving the west end of Exhibition Place could be implemented. Notably, the Dufferin bus route could be extended across the Gardiner into the Exhibition Grounds and, similarly, the streetcar route from Dundas Street West Station could be extended into the Grounds, possibly to connect with the existing Bathurst streetcar loop. Similarly, the proposed Front Street extension would add a further access point for surface transit services into the Exhibition Grounds. These surface transit improvements all appear reasonable and we would support them.

5. Policy Considerations

As noted above (Section 3.3), the joint Metro Planning/Transportation Committee, when considering the CWTS at

its meeting of June 14, 1983, directed the Metropolitan Commissioner of Planning to report on the implications of the proposed transportation improvements on the implementation of those sections of the Metropolitan Official Plan relating to centres. Scarborough's Commissioner of Planning, in a September 8, 1983, report commenting on the CWTS, expressed concern over the amount of employment growth projected for the Central Area and, particularly, the rate at which this growth takes place and the consequent staging of the required transportation improvements to service it. As noted in previous reports on the ARTS study and the Waterfront ICTS proposal, the timing and priority of major transportation improvements into the Central Area could be a critical determinant in the achievement of the Metropolitan planning objective of deconcentration which requires that infrastructure improvements be made to enhance the accessibility and attractiveness of the planned suburban sub-centres as well as the Central Area.

The CWTS report notes that if the recommended road and transit improvements for the Central Area are not implemented then staff of the Metro Technical Transportation Planning Committee "... should be requested to report on what level of development can be reasonably serviced by the transportation system so that the City of Toronto can be advised to take any necessary action to decrease current and proposed densities" (p.40). In a recent report by City Planning staff (September 9, 1983), it was noted that amendments to the City's current road and transit policies will be required if the levels of Central Area office development currently permitted by the Plan are to be satisfactorily accommodated.

The CWTS raises the question of the feasibility of developing a long-term transportation plan for the Metropolitan area which can be staged in such a way as to provide continued support for the development of the planned sub-centres and yet, at the same time, have the flexibility to meet the peak period travel requirements of the Central Area which the expansion of office development possible under current controls could produce. To some extent, this question will be answered in the more broad-scale "Downtown Rapid Transit Line Feasibility Study" and GO-ALRT studies, but the set of transportation proposals for the Central Area recommended in the CWTS cannot be divorced from the overall framework for transportation and land use planning in Metropolitan Toronto.

6. Summary and Conclusions

The analysis by Metro/TTC staff presented in the CWTS essentially looks at the transportation impacts of a further 2.4 m. sq. m of office development in the Central Area south of Queen Street. Studies by City staff show that the projection of such an amount

of development in this area over the next twenty years is not unrealistic under present zoning and Official Plan provisions. Using a similar study approach and assumptions regarding trip generation rates and future travel behaviour, the City's transportation analysis arrived at a set of conclusions basically similar to the CWTS.

Both Metro/TTC and City studies identified the same major road and transit capacity problems. On the roads, the major problem is anticipated to be increasing congestion along the Gardiner/Lakeshore corridor to and from the west, while on the transit system, increasing congestion on the Yonge subway line and GO-transit Lakeshore West service is expected to be the principal, future concern. There is considerable consensus among Metro and City staff regarding the road improvements required to accommodate the projected levels of Central Area employment growth. Agreement exists on the major proposals to build the Front Street Extension to the Gardiner Expressway and to widen the Gardiner beyond this point to four lanes to and from the west. Also, there is basic agreement between Metro and City staff on the layout of the internal street system for the Railway Lands.

The major proposals for future transit improvements into the Central Area are still under study as part of the ongoing Metro/TTC "Downtown Rapid Transit Line Feasibility Study" and the Provincial GO-ALRT study program. These two studies require close co-ordination. However, the CWTS contains firm recommendations regarding the establishment of a Waterfront ICTS line through the Railway Lands and an LRT line through Harbourfront on Queens Quay. In our response to these proposals we recommended that two alternative alignments (Figure 1) for an ICTS, or equivalent rapid transit service, be protected through the Railway Lands at this stage to provide an option for extending the proposed "relief line" through the Waterfront area should this facility eventually be approved. We have recommended that an alignment (Figure 2), utilizing Queens Quay in parts and the reserved transit corridor to the north in others, be protected for a possible Harbourfront LRT service as an alternative to that suggested in the CWTS. Our approach has been to protect transit options at this stage pending the completion of the major transportation studies referred to above and the outcome of the technical and policy discussions to which they will give rise.

Both Metro/TTC and City staffs emphasize that a continued shift towards transit for peak-period travel is essential if the Central Area road system is to remain operational and the predominantly transit character of the City maintained and enhanced. It is believed that the transit options identified provide the scope for improving transit access to the levels necessary to attract this required increase in ridership. Neither Metro's nor the City's

analyses of transportation impacts were based on the full, long-term office development potential of the Central Area. Transportation and land use planning policies can be expected to be modified through time in the light of experience and it is not considered practical to speculate on what further changes might be required beyond the twenty-year framework of these present studies.

Recommendations:

1. That City Council approve Figure 11 of the Metropolitan "Central Waterfront Transportation Study" as a framework for future decisions regarding transportation improvements in the Central Waterfront area, subject to the following qualifications and understandings:

   i) the design of the Front Street extension as shown is understood to illustrate the concept and is only one of several possible design options which will be subject to further evaluation by the appropriate Metro and City staff before a final design is decided;

   ii) the Railway Lands internal road system is understood to be that shown in the City of Toronto Planning and Development Department's "Railway Lands Part II: Development Concept" report of September, 1983;

   iii) the proposals contained in this report and in the "Railway Lands Part II: Development Concept" for modifying the existing ramp system in the Gardiner Expressway/Lakeshore Boulevard corridor be forwarded to the appropriate Metropolitan staff for evaluation;

   iv) The alternative alignments for the extension of the proposed Metro/TTC "relief line" through the Railway Lands as shown in Figure 1 of this report be adopted as a replacement to that shown in the "Central Waterfront Transportation Study" and that it be recognized that these alignments are among a number of transit route options that are to be protected until the "Downtown Rapid Transit Line Feasibility" and "GO-ALRT" studies are completed;

   v) Figure 11 of the "Central Waterfront Transportation Study" to be changed by adding an LRT line option along the Esplanade West as shown in the City of Toronto Planning and Development Department's

"Railway Lands Part II: Development Concept" report of September, 1983;

vi) The right-of-way for a Harbourfront LRT service be protected along the alignment shown in Figure 2 of this report and that the design and operation of such an LRT service take into consideration the concerns expressed in this report regarding the unique operating conditions encountered in Harbourfront; and

vii) The Dufferin Street jog elimination be designed to be compatible with other planning objectives.

2. Subject to Recommendation 1(vii) above, City Council approve Dufferin Street becoming a Metropolitan street south of Dundas Street West at the existing right-of-way width of 20 metres.

3. That City Council recommend to Metro that a joint study be made of the feasibility of depressing the Gardiner Expressway and of the technical options available for achieving this.

4. That City Council request Metro to ensure that the "Downtown Rapid Transit Line Feasibility Study" is co-ordinated with the GO-ALRT study.

5. That City Council request the Metropolitan Council to consider giving priority to the following items:

i) the re-building of the Spadina Avenue bridge over the railway corridor;

ii) the introduction of a streetcar service through Harbourfront along Queens Quay as far west as Spadina Avenue as a first stage of transit improvements to this area; and

iii) the extension of Rees Street south of Lakeshore Boulevard to Queens Quay to improve road access to Harbourfront.

Stephen G. McLaughlin,
Commissioner of
Planning and Development

R. M. Bremner,
Commissioner of Public Works

GS/fs

APPENDIX 1

OFFICE FLOOR SPACE (M2) IN MAJOR PROJECTS
BY STAGE OF DEVELOPMENT *
FOR THE CENTRAL AREA
AS OF JANUARY 1, 1983

STAGE 1: APPLICATIONS FOR COUNCIL APPROVAL

Address	Office Space (M2)
92 Adelaide St. W.	2 881
10 Bay St. (Harbour Sq.)	84 755
655 Bay St.	27 551
1025 Bay St.	1 858
280 Bloor St. W.	12 038
530 Church St.	4 169
105 Davenport Rd.	2 290
217 Davenport Rd.	6 769
1 Front St. W.	8 778
20 Front St. W.	5 049
325 Front St. W.	18 339
325 Front St. W.	8 391
83 Grenville St.	2 984
222 Jarvis St.	29 645
34 King St. W.	127 723
99 Queen St. E.	3 047
576 Queen St. E.	1 859
58 Richmond St. E.	4 027
411 Richmond St. E.	5 099
15 Richmond St. W.	2 607
21 Scollard St.	2 044
100 Simcoe St.	4 499
302 Spadina Av.	2 368
23 Toronto St.	1 377
525 University Av.	9 585
277 Victory St.	3 880
145 Wellington St. W.	3 223
147 Yonge St.	23 557
Sub-Total	410 392

* Note Stages 1-7 are consistent with the stages of development used in our Department's annual Office Monitor reports. Two additional categories "Work Completed in 1981" and "Identified Potential Proposals" were created for use in the transportation analysis.

OFFICE FLOOR SPACE (M2) IN MAJOR PROJECTS
BY STAGE OF DEVELOPMENT
FOR THE CENTRAL AREA
AS OF JANUARY 1, 1983

STAGE 2: COUNCIL APPROVAL

Address	Office Space (M2)
46 Avenue Rd. Stanley Garden Site	2 348
560 Bay St. Baydas Development	4 895
595 Bay St.	30 938
100 Bloor St. W.	13 980
380 Church St.	3 890
25 Dalhousie St.	3 830
70 King St. E.	32 053
101 King St. E.	1 325
121 King St. W.	43 870
255 King St. W. Downtown West (Marathon B)	105 423
700 King St. W.	5 895
20 Richmond St. E.	43 514
1 St. Thomas St.	2 624
40 Trinity Sq.	4 207
79 Wellington St. E.	65 983
95 Wellington St. W.	19 525
171 Yonge St. Yonge/Richmond/Victoria	41 563
729 Yonge St.	4 421
900 Yonge St.	5 145
44 York St.	26 174
Sub-Total	461 603

City Services Committee October 3, 1983.

OFFICE FLOOR SPACE (M2) IN MAJOR PROJECTS
BY STAGE OF DEVELOPMENT
FOR THE CENTRAL AREA
AS OF JANUARY 1, 1983

STAGE 3: PERMIT APPLICATION

Address	Office Space (M2)
770 Bay St.	5 871
429 Bloor St. E.	6 775
Sub-Total	12 646

OFFICE FLOOR SPACE (M2) IN MAJOR PROJECTS
BY STAGE OF DEVELOPMENT
FOR THE CENTRAL AREA
AS OF JANUARY 1, 1983

STAGE 4: ISSUANCE OF A PERMIT

Address	Office Space (M2)
130 Carlton St.	2 016
156 John St.	2 021
260 Richmond St. E.	1 086
730 Yonge St.	2 287
Sub-Total	7 410

OFFICE FLOOR SPACE (M2) IN MAJOR PROJECTS
BY STAGE OF DEVELOPMENT
FOR THE CENTRAL AREA
AS OF JANUARY 1, 1983

STAGE 5: WORK STARTED

Address	Office Space (M2)
252 Adelaide St. E.	1 800
111 Avenue Rd.	3 736
483 Bay St. Bell/Trinity Development	87 216
1132 Bay St.	1 586
2 Berkeley St.	5 762
160 Bloor St. E.	32 384
200 Bloor St. E.	33 274
150 Bloor St. W. Renaissance Place	24 053
77 Carlton St.	1 742
365 Church St.	2 601
80 College St.	5 384
113 Dupont St.	2 149
640 Fleet St.	2 367
71 Front St. E.	1 490
145 Front St. E.	1 786
123 Front St. W.	30 296
255 Front St. W.	27 134
325 Front St. W.	31 647
150 King St. W.	52 220
200 King St. W. Sun Life Building	43 548
468 Queen St. E.	23 332
544 Queen St. E.	5 290
315 Queen St. W.	1 253
207 Queens Quay W.	36 265
60 Simcoe St.	1 192
70 University Ave.	20 802
193 Yonge St.	3 715
444 Yonge St.	71 532
Sub-Total	555 556

OFFICE FLOOR SPACE (M2) IN MAJOR PROJECTS
BY STAGE OF DEVELOPMENT
FOR THE CENTRAL AREA
AS OF JANUARY 1, 1983

STAGE 6: READY FOR OCCUPANCY

Address	Office Space (M2)
234 Adelaide St. E.	1 610
121 Bloor St. E.	21 148
295 College St.	1 295
164 Cumberland St.	3 457
250 Dundas St. W. Dundas/Simcoe/St. Patrick	9 440
130 King St. W.	87 314
26 Wellington St. E. The Wellington	15 547
33 Yonge St.	35 796
150 York St.	29 707
Sub-Total	205 314

OFFICE FLOOR SPACE (M2) IN MAJOR PROJECTS
BY STAGE OF DEVELOPMENT
FOR THE CENTRAL AREA
AS OF JANUARY 1, 1983

STAGE 7: WORK COMPLETED DURING 1982

Address	Office Space (M2)
336 Bay St.	6 308
360 Bloor St. E.	1 239
101 Yorkville Av.	1 026
Sub-Total	8 573

City Services Committee October 3, 1983.

OFFICE FLOOR SPACE (M2) IN MAJOR PROJECTS
BY STAGE OF DEVELOPMENT
FOR THE CENTRAL AREA
AS OF JANUARY 1, 1983

WORK COMPLETED DURING 1981

Address	Office Space (M2)
595 Bay St. Atrium-on-Bay (Trizec-Twigg)	59 622
146 Bloor St. W. Famous Players Theatres	5 597
1 Dundas St. W. Eaton Centre Phase 1B	16 401
1 Dundas St. W. Eaton Centre Phase 1B	49 109
333 King St. E. Toronto Sun Building Addition	2 926
40 Scott St.	9 667
234 Simcoe St.	10 191
70 Yorkville Av.	1 949
Sub-Total	155 462

OFFICE FLOOR SPACE (M2) IN MAJOR PROJECTS
BY STAGE OF DEVELOPMENT
FOR THE CENTRAL AREA
AS OF JANUARY 1, 1983

IDENTIFIED POTENTIAL PROPOSALS

Address	Office Space (M2)
Canadian Broadcasting Corporation (CBC)	169 818
Eaton Centre Phase 2 B	186 079
T.H.C. Lands: York/Lakeshore/Bay/Harbour	64 400
T.H.C. Lands: Bay/Lakeshore/Yonge/Harbour	37 400
T.H.C. Lands: Bay/Harbour/Yonge/Queens Quay	4 200
Harbourfront John & Maple Leaf Quays	15 400
Harbourfront Spadina & Bathurst Quays	15 400
Harbourfront York Quay (Excluding Terminal)	47 000
Railway Lands	1 094 113
Sub-Total	1 633 810
GRAND TOTAL (All Stages)	3 450 766

APPENDIX 2

TRAVEL DEMAND ANALYSIS

In the Metro/TTC "Central Waterfront Transportation Study", the travel demands that could arise from various levels of future office development were calculated by determining the number of workers that the developments would accommodate, and then estimating the number of these that would travel to work in the peak hour. Factors were applied to give the mode of travel, and the residential location these trips would come from. The resulting volumes were loaded onto the road and transit networks and the volume/capacity ratios of the various road and transit corridors were calculated. Where there were capacity deficiencies, improvements were suggested to both the road and transit networks to accommodate the future demands.

The travel demand analysis conducted by the City Planning staff followed a similar sequence of steps with similar trip generation assumptions. However, the Metro study calculated trip demand only for the proposed development, and added the resulting increments to the existing volumes. Consequently, it was an analysis of the marginal travel demand, without any assumptions being made for changes to the existing travel pattern, either in the mode of travel or the pattern of trip distribution.

The City approach considered all the Central Area, and changes in the peak-hour/peak-period ratio, modal split and travel distribution were applied to all work trips to the Central Area both existing and future. The assumption that the peak-hour levels would continue to spread into the general peak period resulted in a slight lowering of the total percentage of trips in the single peak hour by 6%. In effect, this meant that certain trips being made today would shift from the peak hour into the shoulder periods. This adjustment results in additional peak-hour capacity being available for future growth, though this effect was not taken into account in the CWTS. Of even greater significance is the City's treatment of the expected future shift in the modal split of Central Area work trips and the distribution and assignment of these trips to road and transit networks. These matters are discussed below.

1. Modal Split

The existing modal split of peak-hour trips into the Central Area has been estimated as:

Auto	21%
TTC	62%
GO Transit	12%
Other (including walking, cycling)	5%

Using existing peak-hour factors and this modal split, it was estimated that, with the full development of the proposals indicated in this report, the number of autos coming into the Central Area in the morning peak-hour would increase by approximately 13,000. This represents a minimum of an additional 6 lanes of arterial road capacity. In the light of physical, economic and environmental constraints, and the City's general transportation and parking policies, it was not considered desirable or practical to plan for accommodation of this scale of auto usage.

Trends over the past 5 years have shown that peak-hour transit usage into the Central Area is increasing. The present proposals under study for increasing the capacity of both TTC and GO transit services into the Central Area indicate a continued commitment by Government to encourage this trend and further emphasize current pro-transit policies. In addition, factors such as the future cost of gasoline and car parking are also likely to encourage the increasing use of transit for downtown commuting. Consequently, it was considered reasonable to assume that, over the next 20 years, commuter car travel, although increasing in absolute terms, would decrease relative to the use of GO transit and TTC services. This change in mode would affect all Central Area trips, not just the marginal growth resulting from new office development. The future, end-state modal split assumed was calculated as:

auto	16%
TTC	64%
GO	15%
Other	5%

The significant changes in this are the reduction by 5% overall of auto usage, and an increase of 3% in GO transit usage. This latter represents a 25% increase in relative GO usage, and when this new percentage is applied to the future trip volumes it more than doubles existing GO transit ridership.

2. Distribution of Trips

Linked to the mode of travel indicated above is the pattern of the distribution of work trips between home and place of work in the

Central Area. The present distribution was derived from the 1975 Central Area Parking and Loading Study, and adjusted to ensure a satisfactory correspondence with 1981 cordon counts. However, it cannot be assumed that this distribution pattern will continue into the future since this would ignore the impact of the continued growth in population expected to occur beyond Metro, particularly in the north-west. This will result in long-term adjustments in the way people will travel to work in the Central Area. The City analysis took this expected future pattern of population growth into account, and proportionately adjusted the distribution of future work trip origins. This adjustment, for example, had the effect of increasing the relative use of GO transit in the future. Furthermore, when the future modal split was changed to reduce auto travel, this adjustment was, in turn, disaggregated to ensure that potential auto trips were transferred onto the appropriate transit alternative. Thus, for example, in the case of the residential growth areas beyond Metro, which are primarily served by GO transit, the shift was predominantly from auto to GO travel.

3. Network Loadings

The shift in modal split, the reduction in the peak hour/peak period ratio, and the adjustment in the distribution of the Central Area journey to work are all factors that have been incorporated into the travel demand analysis being undertaken by the City. These effects make the future trip volumes estimated by the City not fully compatible with the Metro analysis in technical terms. Nevertheless, the transit and road improvements proposed by Metro and the City are similar and reflect a basic agreement between the two studies regarding estimates of future increases in peak-period commuting into the Central Area.

3.1 Road Network

The principal proposals that increase the regional capacity of the Central Area road system are an additional lane each way on the Gardiner expressway between the Humber River and the Exhibition Grounds and an additional lane each way in the Don Valley corridor. One option to achieve this latter proposal is the widening of Bayview Avenue and the extension of Leslie Street, as suggested in the "Railway Lands Development Concept". This additional capacity and the future estimated volumes of weekday morning peak hour travel are shown schematically in Exhibit B1. It will be noted that all the additional road capacity to the west is used, the estimated existing spare capacity in the northern corridor is further utilized, while in the east there remains some additional capacity.

Existing Volume	5400
Capacity	6700
Future Volume	6100
Future Capacity	6700

From North

Existing Volume	8000
Capacity	8400
Future Volume	9000
Future Capacity	9600

From Don Valley Corridor

Existing Volume	8700
Capacity	9000
Future Volume	10800
Future Capacity	10800

From Gardiner/ Lakeshore Corridor

TOTAL AUTO INCREASE : 3800

EXHIBIT B1

SCHEMATIC VOLUMES & CAPACITIES OF ARTERIAL ROAD CORRIDORS

(MORNING PEAK HOUR - ESTIMATED AUTO TRIPS)

CITY OF TORONTO PLANNING AND DEVELOPMENT DEPARTMENT

SEPTEMBER 1983

3.2 Transit Options

Unlike the road improvements, there are several options currently being studied to handle the projected transit demands. A selection of 6 options for transit improvements are illustrated in Exhibits B2 to B7, and described below. The GO-ALRT line, or an equivalent GO system, has been assumed for all the options illustrated here.

Option 1 (Exhibit B2)

This scheme includes the east "relief" line running north-eastwards from Union Station along the existing rail corridor meeting the Bloor/Danforth subway line at Donlands, together with an LRT line on Spadina Avenue.

This option would not provide sufficient relief in the long term for the Yonge subway, particularly north of Bloor Street.

Option 2 (Exhibit B3)

This transit scenario includes the full "U"-shaped, radial "relief" line from Dundas Street West station down to Union Station and north to York Mills Road. It would handle all the projected volumes.

Option 3 (Exhibit B4)

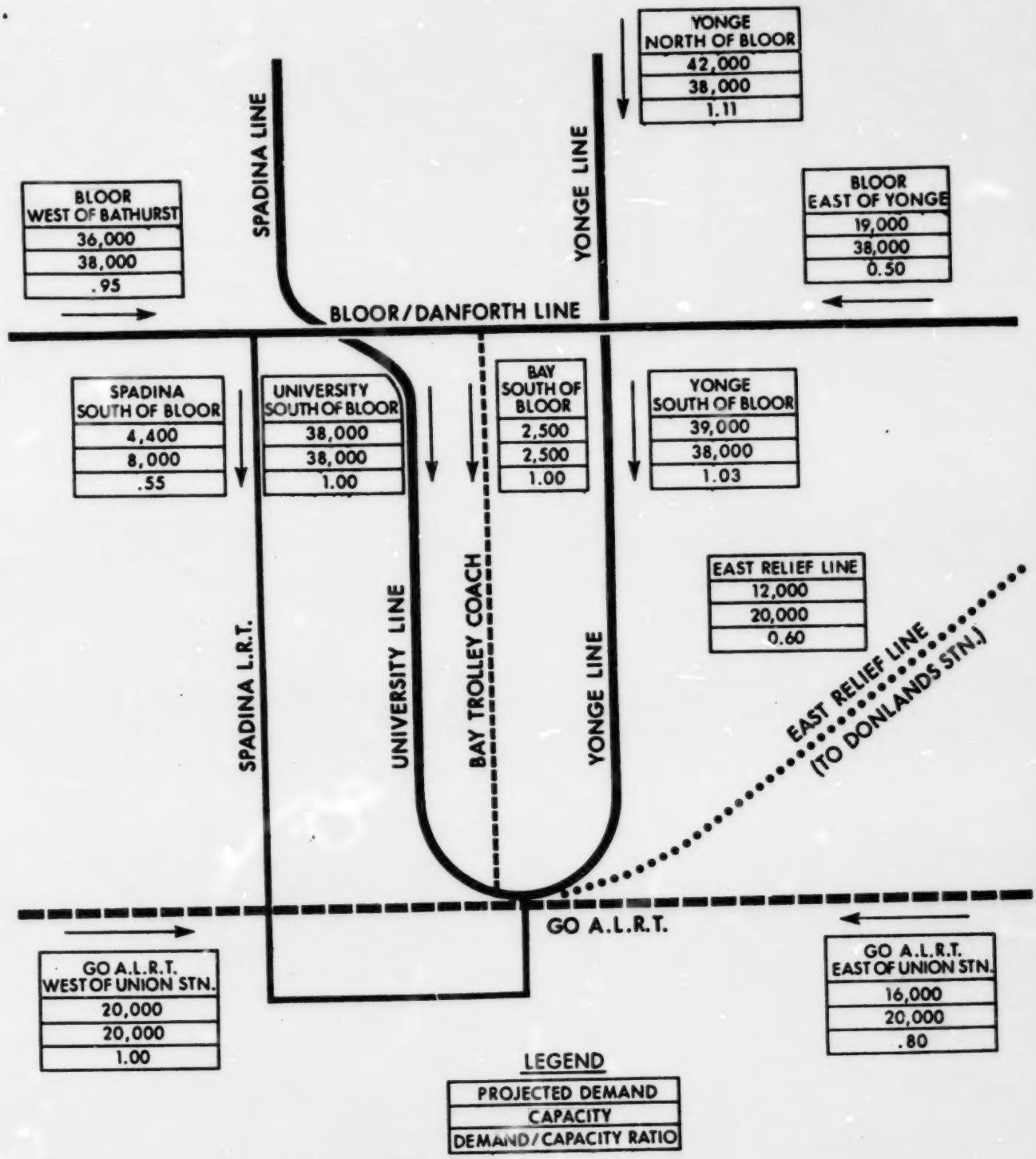
This option shows the effect of reducing the headways on the Yonge line to 90 seconds. This, like Option 2, appears to be capable of handling the projected demands without overloading the transit system.

Option 4 (Exhibit B5)

As an alternative alignment for the east "relief line" of Option 1, this option examines the potential loading of a rapid transit facility running below Bay Street from the Bay subway station south to Union Station. If such a facility could be integrated with the subway system, it would appear to offer an effective means of relieving the Yonge line south of Bloor Street, although, like the east "relief line", it does not relieve the long-term overloading expected to occur on the Yonge line north of Bloor Street.

The provision of various options for improved surface transit services down Bay Street, most notably the proposal for a surface LRT service, are presently the subject of a feasibility study being undertaken for the City by consultants. Options 5 and 6 below show the effect, in terms of transit ridership volumes, of

OPTION 1*

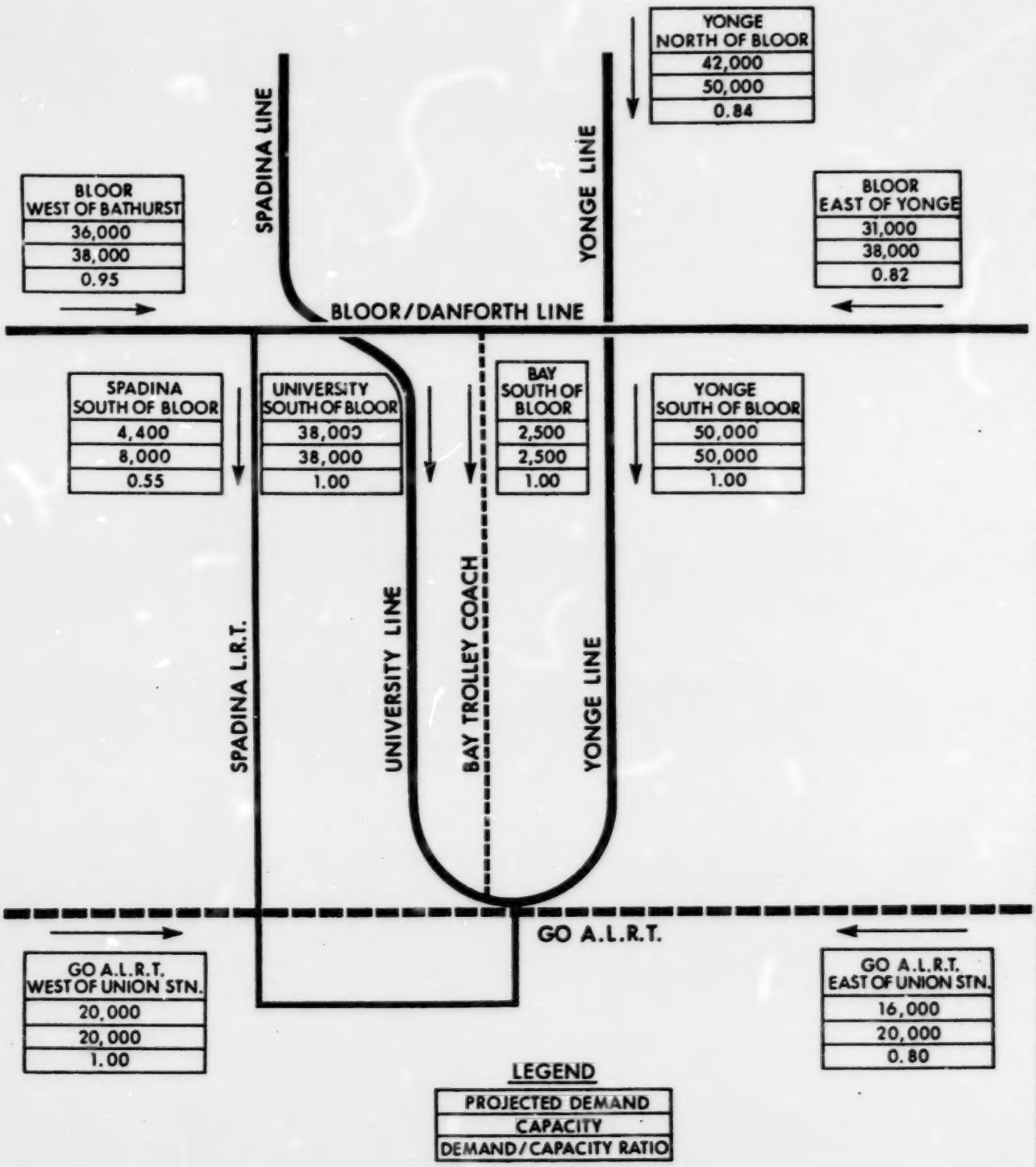


* EAST RELIEF LINE (UNION STN. TO DONLANDS STN.)
GO A.L.R.T.
SPADINA L.R.T.

EXHIBIT B2

CITY OF TORONTO PLANNING AND DEVELOPMENT DEPARTMENT
POLICY SECTION
SEPTEMBER, 1983

OPTION 3*



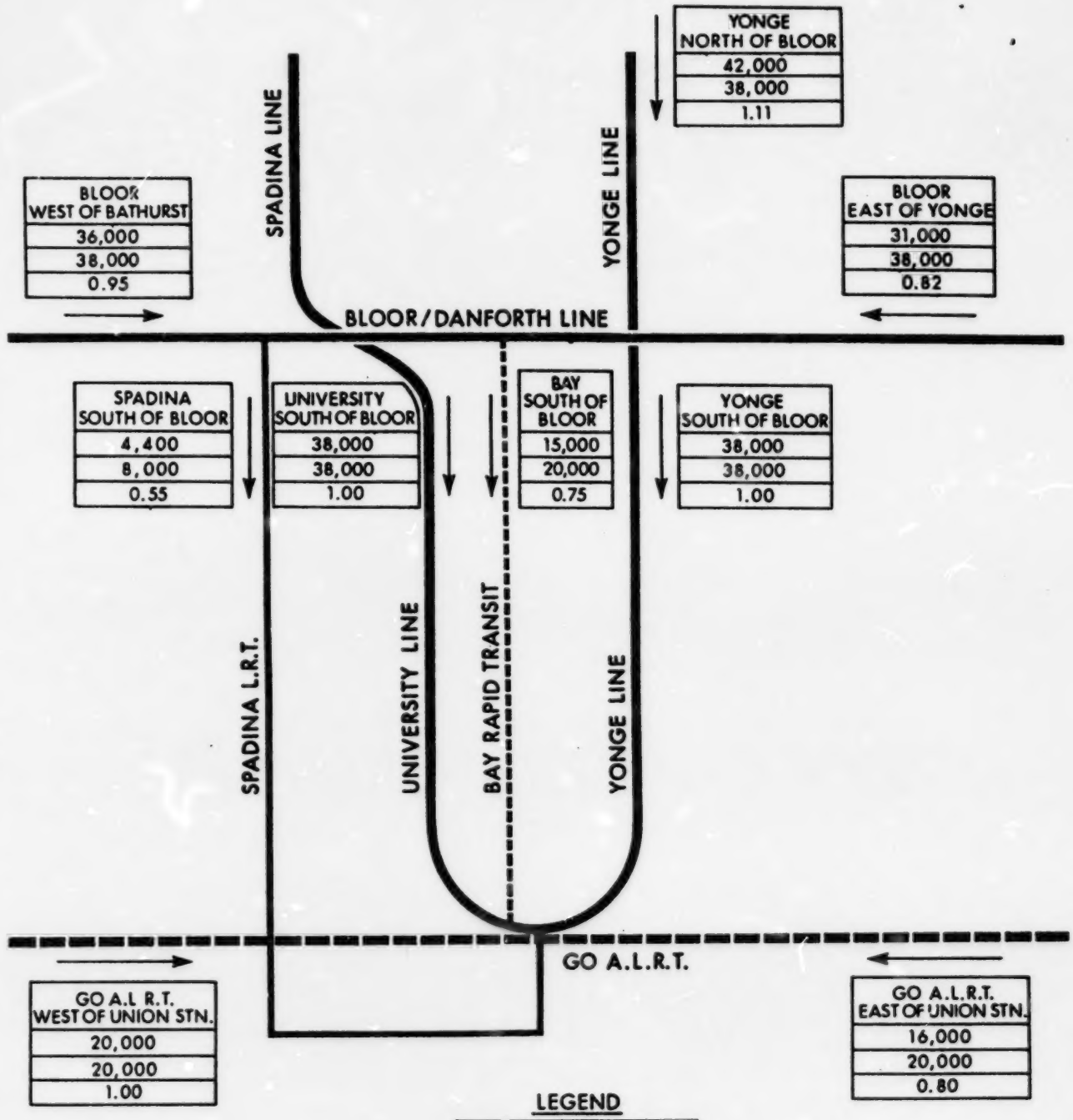
* YONGE LINE (UNION STN. TO FINCH STN. - 90SECONDS HEADWAY)
GO A.L.R.T.
SPADINA L.R.T.

EXHIBIT B4

CITY OF TORONTO PLANNING AND DEVELOPMENT DEPARTMENT
POLICY SECTION — SEPTEMBER, 1983

40C

OPTION 4*



* BAY RAPID TRANSIT
GO A.L.R.T.
SPADINA L.R.T.

EXHIBIT B5

CITY OF TORONTO PLANNING AND DEVELOPMENT DEPARTMENT
POLICY SECTION — SEPTEMBER, 1983

providing the option to improve Bay Street transit services by means of an LRT operation on a partially protected right-of-way south to Queen Street.

Option 5 (Exhibit B6)

This is similar in concept to Option 2, but extends the east "relief line" north to York Mills Road. It also includes the LRT option for improved transit services on Bay Street. While the transit ridership volumes, like those in Option 6, indicate the potential attractiveness of such a probe, preliminary findings from the Bay Street LRT consultant study indicate that the achievement of a protected right-of-way on Bay Street will adversely impact on traffic and pedestrian movements and may, therefore, not be deemed acceptable.

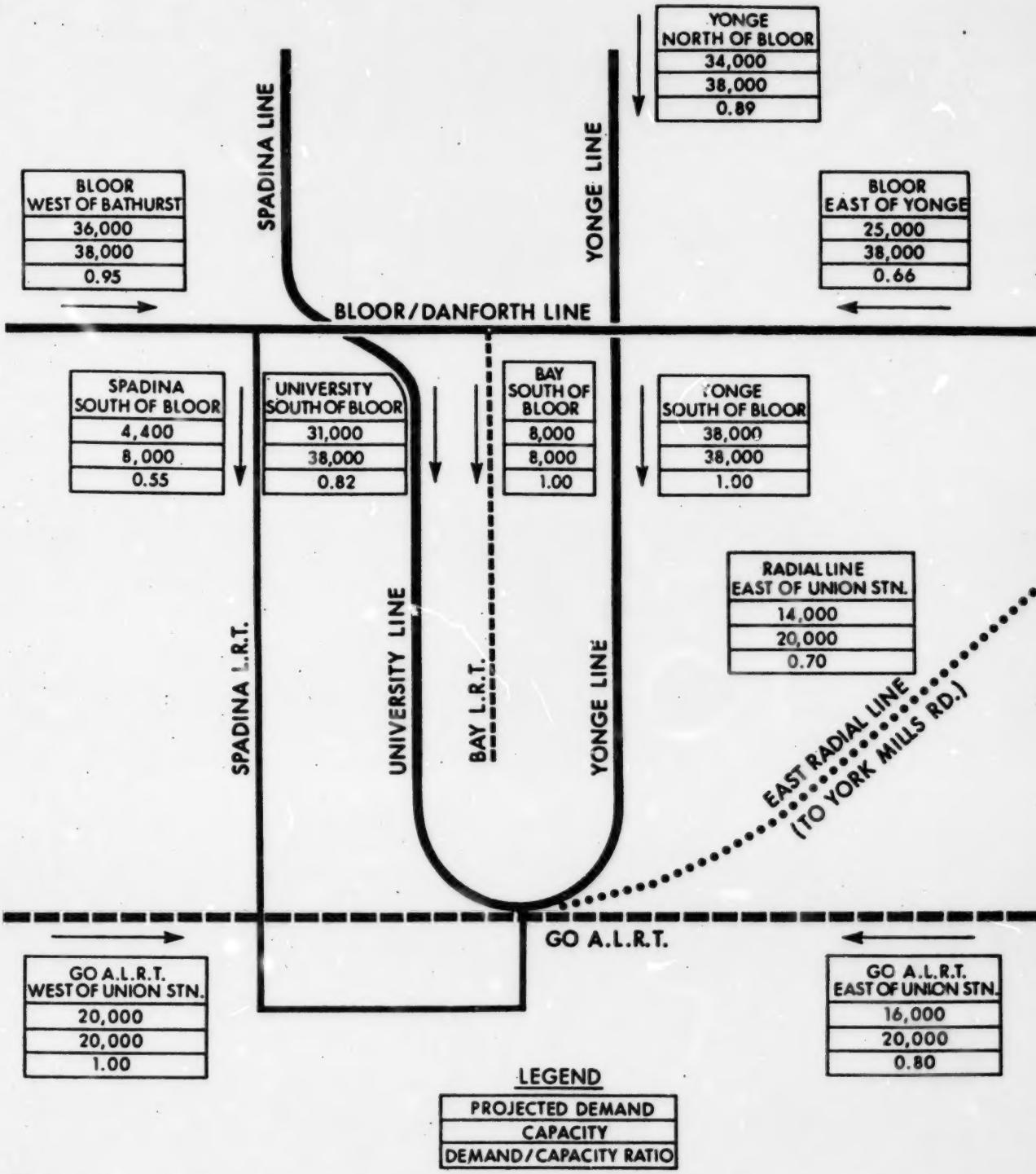
Option 5 appears to provide system improvements which accommodate the projected volumes of transit ridership without any overloading.

Option 6 (Exhibit B7)

This is a combination of reduced headways on the Yonge line to Union Station and an LRT service on Bay Street and is similar to Option 3. This also appears to be capable of handling the projected loads.

These options are being studied as part of the "Downtown Rapid Transit Line Feasibility Study", and their relative cost-effectiveness will be a significant part of the evaluation and final selection of the preferred system. The work by the City to date confirms that there are options available for transit improvements on the regional scale that can handle the transit demands that are likely to arise.

OPTION 5*



* EAST RADIAL LINE (UNION STN. TO YORK MILLS RD.)
GO A.L.R.T.
SPADINA L.R.T.
BAY L.R.T. (BAY STN. TO QUEEN ST.)

EXHIBIT B6

CITY OF TORONTO PLANNING AND DEVELOPMENT DEPARTMENT
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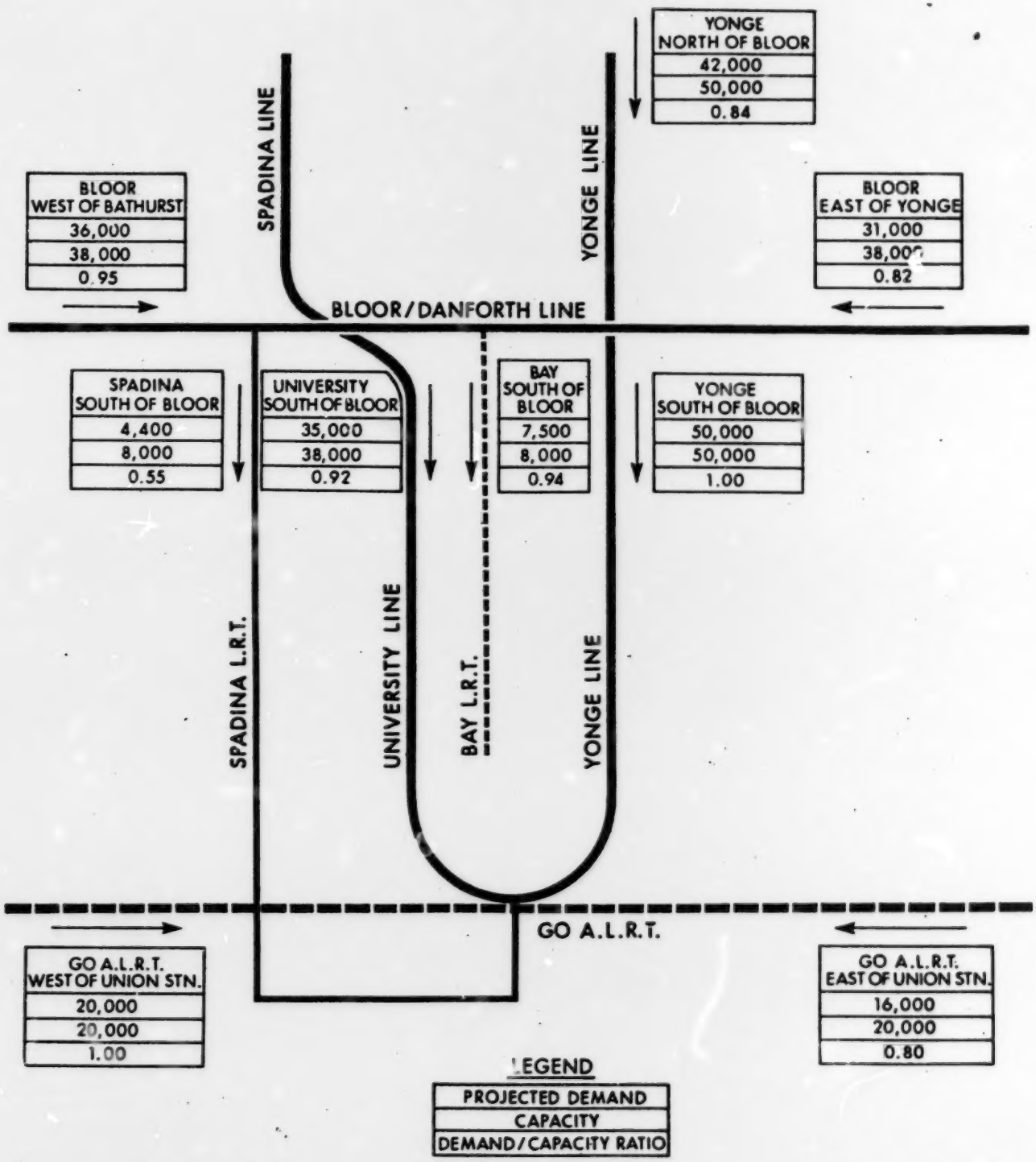
OPTION 6*



* YONGE LINE (UNION STN. TO FINCH STN. - 90 SECONDS HEADWAY)
GO A.L.R.T.
SPADINA L.R.T.
BAY L.R.T. (BAY STN. TO QUEEN ST.)

EXHIBIT B7

CITY OF TORONTO PLANNING AND DEVELOPMENT DEPARTMENT
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